National Aeronautics and
Space Administration

Office of Equal Opportunity Programs
Minority University Research and Education Division

Education Programs
for
Tribal Colleges and Universities

FISCAL YEAR 1999 ANNUAL PERFORMANCE REPORT
and
FISCAL YEARS 2001–2003 PERFORMANCE PLAN

"While my spirit is with my body, the smoke of my breath shall be towards the Sun..."
-Red Cloud

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EXECUTIVE SUMMARY

This document contains the National Aeronautics and Space Administration's (NASA) Fiscal Year (FY) 1999 Performance Report and FY 2001-2003 Performance Plan in response to Executive Order (EO) 13021, *Tribal Colleges and Universities (TCU)*, signed on October 19, 1996, by President William J. Clinton.

The NASA FY 1999 Performance Report for TCU's is the second formal report in response to EO 13021 which mandates increased Federal support for TCU's. The FY 1999 TCU Performance Report includes fiscal data on all NASA projects that provide support to TCU's and their students, as well as examples of each type of program award designed to increase educational opportunities for Native American students.

NASA's commitment to supporting TCU's and the mathematics, science, engineering, and technology education of Native American students dates back to the early 1990's with a summer institute at Diné College (formerly known as Navajo Community College). Shortly thereafter, several precollege outreach and undergraduate student support projects were initiated at Northwest Indian College, Turtle Mountain Community College, and D-Q University.

In FY 1999, NASA awards to TCU's increased to $2.9 million, which is a $400,000-increase over the FY 1999 baseline plan of $2.5 million. This includes $1.15 million in direct awards to seven different TCU's and $1.75 million in awards to TCU's through third-parties and the private sector. These awards were primarily precollege education and teacher training projects carried out under competitive NASA programs for minority universities. The TCU Performance Plan established in FY 1998 calls for annual increases of $0.2 million in both total and direct NASA funding to TCU's.

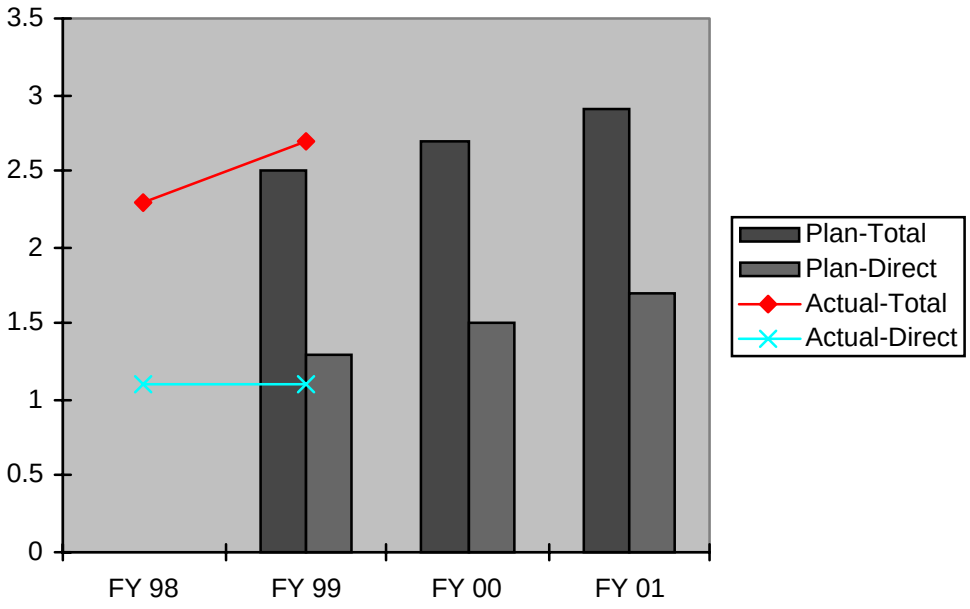
In conformance with EO 13021, NASA's FY 2001-2003 Performance Plan renews its commitment to TCU's by focusing its efforts on the critical areas of technology, science and mathematics, as defined by the TCU Presidents, and by seeking to double annual funding to TCU's over the 5-year period from 1998 to 2003.

NASA Associate Administrator for Equal Opportunity Programs, Mr. George E. Reese, is the senior official responsible for implementing NASA's response to EO 13021. He has delegated responsibility for providing Agencywide leadership for oversight, policies, and major funding of NASA TCU programs to Ms. Bettie L. White, Director of the Minority University Research and Education Division

(MURED). Supporting Ms. White is Ms. Mary Anne Stoutsenberger, University Programs Specialist for TCU's.

It is MURED's mission to meld NASA support of TCU's with NASA's major mission responsibilities. To this end, all of the TCU projects reported herein incorporate NASA's mission themes, make use of NASA-driven technologies, emphasize partnerships with the NASA Strategic Enterprises, the NASA Centers and the Jet Propulsion Laboratory (JPL), and/or support TCU efforts to strengthen and expand their institution's Mathematics, Science, Engineering, and Technology (MSET) educational opportunities.

NASA Annual Support to TCU's



NASA ORGANIZATION

Mission

NASA implements research and development and research and technology through the following processes:

- Scientific Research to advance and communicate scientific knowledge and understanding of the Earth, the solar system, and the universe and use the environment of space for research;
- Space Exploration to explore, use, and enable the development of space for human and robotic endeavors in science and commerce; and
- Technology Development and Transfer to research, develop, verify, and transfer advanced aeronautics, space, and related technologies.

Throughout the narratives in this report, awards and projects are identified by the abbreviations given below for both the Headquarters Office from which the funding originated and the Center or Jet Propulsion Laboratory (JPL) from which the award was made.

NASA Headquarters

NASA Headquarters, located in Washington, DC, is the corporate headquarters, responsible for leadership and management across the Strategic Enterprises, development of program strategies, and interfacing with Congress and the White House. Within NASA Headquarters, five program offices have responsibility for the Enterprise missions:

- **Office of Space Science (OSS)**—lead responsibility for the Space Science Enterprise. To solve mysteries of the universe, explore the solar system, discover planets around other stars, and search for life beyond Earth.
- **Office of Earth Science (OES)**—lead responsibility for the Earth Science Enterprise. To understand the total Earth system and the effects of natural and human-induced changes on the global environment.
- **Office of Space Flight (OSF)**—lead responsibility for the Human Exploration and Development of Space (HEDS) Enterprise. To open the space frontier by exploring, using, and enabling the development of space to expand human experience into the far reaches of space.
- **Office of Life and Microgravity Sciences and Applications (OLMSA)**—responsible for the science content of the HEDS Enterprise.
- **Office of Aerospace Technology (OAT**)—lead responsibility for Aerospace Technology Enterprise. To pioneer the identification, development, verification, transfer, application, and commercialization of high-payoff aeronautics and space transportation technologies.

Research and education activities, specific to a given NASA Enterprise, may arise from within any of the program offices.

Also within NASA Headquarters, functional/staff offices have responsibility for the crosscutting functions that serve all of the Enterprises. The key functional/staff offices with major responsibilities for NASA education and minority university programs that span all of the Enterprises are as follows:

- **Office of Human Resources and Education (OHRE)**—lead responsibility for Agency education programs.
- **Office of Equal Opportunity Programs (OEOP)**—lead responsibility for Agency minority university programs, including TCU programs.

Funding for TCU programs may originate from any of the offices listed above.

Research and Education Programs

NASA conducts its primary research and development activities through Announcements of Opportunity (AO) for flight projects and NASA Research Announcements (NRA) for science and engineering research projects. The NASA Enterprises routinely release AO's and NRA's for which all categories of U.S. and non-U.S. organizations, including educational institutions, industry, nonprofit institutions, NASA Centers, and other government agencies are eligible to propose.

To facilitate access for minority universities to NASA research activities, the OEOP offers four competitive solicitations which are open exclusively to minority universities:

University Research Center (URC) Awards are major, multidisciplinary research units established at Minority Institutions (MI), each focused on a specific area of NASA interest. The program goals are to achieve a broad-based, mainstream, competitive aerospace research capability among the Nation's Historically Black Colleges and Universities (HBCU) and Other Minority Universities (OMU) that will foster new aerospace science and technology concepts, expand the Nation's base for aerospace research and development, develop mechanisms for increased participation by faculty and students in mainstream research, and increase the productivity of students (who are U.S. citizens and who have historically been underrepresented) with advanced degrees in NASA-related fields.

Institutional Research Awards (IRA) improve academic, scientific and technology infrastructure and broaden the NASA-related science and technology base at MI's. Two awards with different focus areas have been made under this category. The IRA (Research) awards provide MI's with an opportunity to provide a quality learning and research environment in NASA-related areas. The IRA (Network Resources and Training Sites [NRTS]) award is designed to improve the in-house capability to electronically access science data and computational resources; to develop *mechanisms* to support, sustain, and evolve the network infrastructure of the targeted universities and colleges***;***

and to make MI's more effective in the competitive process for NASA and other science, engineering, and technology funding opportunities.

Principal Investigator (PI) Awards provide faculty with limited NASA experience an opportunity to integrate the research and education components of their careers with the unique mission requirements of a specific NASA Center or JPL. Each fiscal year, MI's are invited to submit proposals for the *Faculty Awards for Research (FAR).* The FAR program provides for competitive, peer-review selection of outstanding and promising engineering, physical, and life-science-tenured and tenure-track faculty who are capable of contributing to the Agency's research and education objectives. This award provides faculty members with research support and exposure to the NASA peer-review process to enable them to demonstrate creativity, productivity, and future promise in the transition toward achieving competitive awards in the Agency's mainstream research processes.

NASA also supports a number of initiatives that are related to developing linkages in the education system to engage minority universities in precollege and teacher training activities:

Precollege Awards provide opportunities for MI's, in collaboration with NASA and local school districts, to provide informal educational opportunities that will enhance the numbers and percentage of students enrolled in mathematics and science college preparatory courses. As a result of participating in these awards, students will gain awareness of career opportunities in MSET fields and exposure to NASA's mission and scientific and technical personnel role models. Beginning in FY 2000, MI's will be invited to submit proposals for precollege awards under the *Science, Engineering, Mathematics, Aerospace Academy (SEMAA) Program.*

Teacher Education Awards provide opportunities for MI's to develop diverse and exemplary research-based mathematics, science, technology, and geography teacher education curricula, integrated with content from NASA's mission. It is the Agency's desire that the results from these awards serve as models for other colleges and universities. Additionally, these awards will contribute to the participating States' efforts to increase the numbers and percentage of State-certified mathematics, science, technology, or geography teachers employed in hard-to-staff elementary, middle, and secondary schools not normally served by NASA. Each fiscal year, MI's are invited to submit proposals for teacher preparation and enhancement awards under the *Minority University Mathematics, Science and Technology Awards for Teacher Education Program (MASTAP).*

Partnership Awards are formed between MI's and NASA Strategic Enterprises, Centers and JPL, aerospace industry, and other education institutions, and they develop projects that are unique, are outside the OEOP norm, and have the likelihood of continued funding from other sources. Partnership Awards focus on increasing the number and quality of underrepresented minorities in MSET education. Partnerships primarily seek to strengthen the MSET infrastructure of higher education institutions and undergraduate research, to integrate cutting-edge science and technology concepts, practices, and teaching strategies into relevant areas of the undergraduate curriculum and to increase the number of students who pursue advanced MSET degrees.

NASA Centers and the Jet Propulsion Laboratory

The NASA Centers and the Jet Propulsion Laboratory are the primary sites from which the Enterprise missions are implemented. Each Center and JPL has Agencywide leadership responsibility for a specific Center of Excellence area (shown in italics) along with other roles and responsibilities for the Strategic Enterprises as listed below.

- **Ames Research Center (ARC),** Moffett Field, California—*Information Technology, Astrobiology, Aviation Operations Systems*
- **Dryden Flight Research Center (DFRC),** Edwards, California—*Atmospheric Flight Operations, Flight Research*
- **Glenn Research Center (GRC) at Lewis Field**, Cleveland, Ohio—*Turbomachinery, Aeropropulsion and Aerospace Power Systems Research and Technology*
- **Goddard Space Flight Center (GSFC),** Greenbelt, Maryland—*Earth Science, Physics and Astronomy, Earth System Science*
- **Jet Propulsion Laboratory (JPL),** Pasadena, California—*Deep Space Systems, Planetary Science and Exploration, Instrument Technology*
- **Johnson Space Center (JSC),** Houston, Texas—*Human Operations in Space, Human Exploration and Astro Materials*
- **Kennedy Space Center (KSC),** Florida—*Launch and Payload Processing Systems, Space Launch*
- **Langley Research Center (LaRC),** Hampton, Virginia—*Structures and Materials, Atmospheric Science, Airframe Systems*
- **Marshall Space Flight Center (MSFC),** Huntsville, Alabama—*Space Propulsion, Space Transportation Systems Development, Microgravity and Space Optics, and Manufacturing Technology*
- **Stennis Space Center (SSC),** Mississippi—*Rocket Propulsion Testing Systems, Rocket Propulsion Testing and Commercial Remote Sensing.*

FY 1999 PERFORMANCE

For FY 1999, NASA established the following objectives for its support of TCU's:

1. NASA will focus its attention on identifying and removing barriers to TCU participation in the areas designated by the White House Initiative Office on TCU's as the top priorities for Federal Agencies' support in the areas of technology, science, and mathematics.

    - Beginning with FY 1999, NASA will increase the amount of direct funding to TCU's by $0.2 million per year, so that during the 5-year period from FY 1999 to FY 2003, the amount of direct funding will double over the FY 1998 baseline of $1.2 million.

    - In addition, a baseline goal of increasing the total NASA funding to TCU's (both direct and third-party) from $2.3 million in FY 1998 to $2.5 million in FY 1999 was also set.

The actual FY 1999 outcomes reflect progress towards achieving these goals. Total FY 1999 funding for TCU's (including both direct and third-party awards) exceeded its FY 1999 baseline goal of $2.5 million by $0.4 million. A total of $2.9 million was provided to TCU's--a 26-percent increase over the FY 1998 funding level of $2.3 million. NASA developed active contacts at 28 of the 31 TCU's. In FY 1999, the Agency received 10 proposals for new TCU projects of which 5 were funded. Direct TCU funding of $1.2 million included 11 awards to seven different Tribal Colleges: two precollege outreach project awards under the Precollege Awards for Excellence (PACE) Program, seven education project awards, one research project award under the Partnership Awards Program, and a high school/ undergraduate research involvement unsolicited project award to Turtle Mountain Community College.

In an effort to identify and remove barriers to TCU participation in NASA activities, discussions with members of the TCU community indicated that the primary barrier was lack of familiarity of TCU's with NASA and of NASA with TCU's. To remove these barriers, workshops targeted at TCU's were held at Goddard Space Flight Center and Langley Research Center. In addition, a technology transfer workshop for TCU's was sponsored by Johnson Space Center at Los Alamos National Laboratories. Projects that meld TCU concerns with NASA capabilities in innovative and productive ways are the result. Two prime examples are Northwest Indian College's project entitled, "Assessing Agricultural Land Conversion Impacts to Tribal Fisheries Using NASA Satellite Imagery," in collaboration with NASA's Goddard Space Flight Center, and Lac Courte Oreilles Ojibwa Community College's "Renewable Energy & Sustainable Development Institute Project," in collaboration with NASA's Glenn Research Center. These

are technology spinoffs from NASA's Earth remote-sensing and space-power systems programs, respectively.

In addition to its direct impact on NASA grantees, interns, and fellows, NASA greatly encourages using the inspiration of the space program to encourage students to pursue careers in science, mathematics, and technology. To this end, NASA was extremely pleased that the American Indian Science and Engineering Society (AISES) has forged a long-term partnership with NASA through the appointment of NASA's first Native American astronaut, Lieutenant Commander John B. Herrington (Chickasaw), to the AISES Board of Directors.

TABLE 1: NASA AWARDS TO TRIBAL COLLEGES AND UNIVERSITIES

FY 1999

STATE/INSTITUTION	R&D	PE	TRAINING	F&E	FELLOWS	SFA	DIS	TPA	PSI	AI	*OTHER	TOTALS
ARIZONA												
Diné College (AZ & NM)			$492,671									$492,671
CALIFORNIA												
D-Q University												
KANSAS												
Haskell Indian Nations University												
MICHIGAN												
Bay Mills Community College												
MINNESOTA												
Fond du Lac Tribal and Community College												
Leech Lake Tribal College												
White Earth Tribal and Community College												

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 1: NASA AWARDS TO TRIBAL COLLEGES AND UNIVERSITIES

FY 1999

STATE/INSTITUTION	R&D	PE	TRAINING	F&E	FELLOWS	SFA	DIS	TPA	PSI	AI	*OTHER	TOTALS
MONTANA												
Blackfeet Community College												
Dull Knife Memorial College												
Fort Belknap College												
Fort Peck Community College												
Little Big Horn College												
Salish Kootenai College			$151,064									$151,064
Stone Child College												
Montana Consortium												
NORTH DAKOTA												
Cankdeska Cikana Community College												
Fort Berthold Community College												
Sitting Bull College												
Turtle Mountain Community College			$29,335									$29,335
United Tribes Technical College												
ND Association of Tribal Colleges												
NEBRASKA												
Little Priest Tribal College												
Nebraska Indian Community College												

TABLE 1: NASA AWARDS TO TRIBAL COLLEGES AND UNIVERSITIES

FY 1999

STATE/INSTITUTION	R&D	PE	TRAINING	F&E	FELLOWS	SFA	DIS	TPA	PSI	AI	*OTHER	TOTALS
NEW MEXICO												
Crownpoint Institute of Technology												
Institute of American Indian Arts												
Southwestern Indian Polytechnic Institute			$100,000									$100,000
SOUTH DAKOTA												
Cheyenne River Community College												
Oglala Lakota College			$200,000									$200,000
Sinte Gleska University												
Sisseton Wahpeton Community College												
WASHINGTON												
Northwest Indian College	$77,289											$77,289
WISCONSIN												
College of the Menominee Nation												
Lac Courte Oreilles Ojibwa Community College			$100,000									$100,000

TABLE 1: NASA AWARDS TO TRIBAL COLLEGES AND UNIVERSITIES

FY 1999

STATE/INSTITUTION	R&D	PE	TRAINING	F&E	FELLOWS	SFA	DIS	TPA	PSI	AI	*OTHER	TOTALS
NATIONAL ORGANIZATIONS												
American Indian College Fund												
American Indian Higher Education Consortium (AIHEC)												
American Indian Science & Engineering Society								$100,000				$100,000
Edu Tech, Ltd.								$67,000				$67,000
Hampton University								$53,000				$53,000
Minority University-Space Inter-disciplinary Network (MU-SPIN)												
NASA Space Grant Program								$102,000				$102,000
National Action Council for Minorities in Engineering/NASA USAR Program								$24,000				$24,000
New Mexico Highlands/AISTEC	$150,000							$1,000,000				$1,150,000
National Research Council					$200,000							$200,000
Allied Technology Group, Inc.									$56,000			$56,000
GRAND TOTAL	**$227,289**		**$1,073,070**		**$200,000**			**$1,346,000**	**$56,000**			**$2,902,359**

CATEGORIES:

R&D - RESEARCH & DEVELOPMENT
PE - PROGRAM EVALUATION
TRAINING – TRAINING
F&E - FACILITIES & EQUIPMENT
FELLOW - FELLOWSHIPS, RECRUITMENT, IPA
SFA – STUDENT FINANCIAL ASSISTANCE
DIS - DIRECT INSTITUTIONAL SUBSIDIES
TPA - THIRD-PARTY AWARDEES
PSI - PRIVATE-SECTOR INVOLVEMENT
AI - ADMINISTRATIVE INFRASTRUCTURE

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 2: SUMMARY OF TOTAL AGENCY AWARDS BY CATEGORY: FY 1999

1. Agency: National Aeronautics and Space Administration

2. Name, Title, and Signature of Agency Representative:

George E. Reese
Associate Administrator for Equal Opportunity Programs

3. Total Funding for All Institutions of Higher Education in FY 1999: **$1,030,684,000**

AWARDS (Dollars in Thousands)

CATEGORY	TOTAL AWARDS TO IHE's*	TOTAL AWARDS TO TCU's	% OF AWARDS TO TCU's
1. Research & Development	$896,388	$77	<.01%
2. Technology-Related Activities			
3. Direct Institutional Subsidies			
4. Program Evaluation			
5. Training & Technical Assistance	$38,372	$1,696	4.4%
6. Facilities & Equipment	$4,134		
7. Fellowships, Internships, Recruitment, IPA's	$16,536	$73	.44%
8. Student Tuition Assistance, Scholarships, and Other Aid			
9. Economic Development			
10. Administrative Infrastructure			
11. Other Activities	$75,254	$1,056	1.4%
Total	$1,030,684	$2,902	.28%

Daniel S. Goldin
Agency Head

Agency Head (Signature)

Date

*IHE's= Institutions of Higher Education

FY 1999 PROJECT NARRATIVES

Examples of narrative summaries for each type of FY 1999 NASA TCU project appear below. Each narrative is identified by the institution conducting the project, the project title, the grant number, the year that the project was first funded, the Headquarters office from which the funding originated, the NASA Center or JPL from which the award was made, and the funds obligated in FY 1999.

Research and Development

Partnership Award

Northwest Indian College, Assessing Agricultural Land Conversion Impacts to Tribal Fisheries Using NASA Satellite Imagery

NCC 5-423 OEOP/GSFC, FY 1999: $77,289

In 1997, the Washington State Department of Health (WDOH) ordered a closure of Lummi Tribal shellfish growing waters in Portage Bay, due to high fecal coliform concentrations. The WDOH identified dairy waste practices from the Nooksack Basin as the most probable source of the excessive fecal coliforms. Other fisheries in this watershed, including salmon fisheries, have also been impacted, experiencing declines to the extent that one species, Spring Chinook, is now listed under the Endangered Species Act.

This problem is representative of a growing number of situations in which the activities of different user groups conflict, as in this instance, between forest harvesters, terrestrial agriculturists, and marine aquaculturists. Thus, the project will have both national and international applications.

The initial goal of this project is to quantify the impact of land conversion in the Nooksack River Basin on Tribal shellfish and salmon fisheries in the Nooksack River and in Portage Bay through analysis of satellite-generated multispectral imagery in combination with verification using field data. This is a new application of satellite imagery that identifies and quantifies land-use impacts on water quality and fisheries. It assesses the impact of forestry land conversions on Nooksack River basin salmon streams, agriculture cover crop changes on Portage Bay shellfish, and hybrid poplar conversions on Tribal shellfish, and salmon resources.

Satellite imagery will be used to develop Global Information System (GIS) coverage of the Nooksack River basin. The images will be processed to identify selected vegetation types including conifer and deciduous forest, bare ground/corn stubble agriculture lands, and hybrid poplar plantations. Processed image information will be ground-truthed for spatial accuracy and accuracy of vegetative typing. Temporal GIS coverage of selected vegetation types will be compared to processed images from subsequent points in time to document the extent and rate of land conversion activities.

Training and Technical Assistance

Precollege Award

Oglala Lakota College, Scientific Knowledge for Indian Learning and Leadership (OLC/SKILL) NASA Honors Program

NAG 5-7548 (1998) OEOP/GSFC, FY 1999: $100,000

Introduction:

The purpose of the OLC/SKILL NASA Honors Program is to increase the secondary school retention and college entrance rate of Native American students. The program focus has been to recruit and retain 4 groups of 25 students for a total of 100 students a year over a 4-year period spanning their 9^{th} through 12^{th} grades.

A 4-week residential summer experience at the South Dakota School of Mines and Technology (SDSM&T) focuses on course work that provides skill-building in problem-solving and critical-thinking. In addition, students are trained in research methodology. The curriculum emphasizes students' understanding of the NASA Earth Science Program.

This last year was a year of transition and changes for the program. A dramatic change in program design was implemented. The most significant change was to have the cohort of graduating students return for a bridge year of programming.

Outcomes:

1) Of the 66 students who completed the summer programs in FY 1998, all but 5 returned for this year's program (92.4 percent). The reservation schools in western South Dakota, from which the majority of program participants are drawn, typically experience dropout rates in the ranges of 55 to 75 percent.

2) Students were enrolled in various science and mathematics classes, depending on their grade level. The classes offered, and the hours logged in each of the classes, are given in Table 1.

Table 1. Classes Offered

Class	Classroom Instruction Hours	Laboratory Hours	Field Work Hours	Total Hours
Computers		16.5		16.5
Mathematics	16.5			16.5
Physics (NASA III only); Chemistry (NASA IV only)	12.4	0.8		12.12
Biology (NASA V only)	4	8		12
Communications	16.5			16.5
Study Skills	16.5			16.5
Study Hall	36			36
Team Building	12			12
Academic Games	6	9		15
Careers	11			11
Earth System Science	8		12	20
Native American Studies	6		3	9
Total Hours	**148.5**	**41.5**	**15**	**205**

The format of the classes provided the students with an introduction and overview of the materials and content that they would encounter during the upcoming academic year. The schedule of the program provided a large amount of structured time for students to study and work on homework or projects.

3) Students had a large amount of contact with the faculty at SDSM&T. Three times a week, the students interacted with guest speakers who attended the Careers Seminar Group and discussed their particular career field and the science and mathematics needed to achieve this type of occupation. In the past 2 years, the program has had very good success in working with the different SDSM&T departments to arrange career seminar sessions for the students. Increased interest from the SDSM&T faculty and departments has occurred as positive interaction between the students and faculty increased.

Along with the Careers Seminar sessions, additional lecture and interaction periods occurred between students and guests. This activity was well received by the students. The program staff and participants were very honored to have Dr. Ted Gull return as a special guest from NASA.

4) The NASA Honors Program is also designed to help students develop a comfort level with the entire college experience. The activities and interaction of the students with campus life removes many of the social issues that a first-year college student encounters. Activities and sessions with admissions, financial aid, and residence life offices continued as a part of the program.

Partnership Award

Diné College, Student Math & Science Career Initiatives

NAG 9-968 (1997) OEOP/JSC, FY 1999: $163,336

Diné College's goals for the NASA proposal "Science Enrichment Activities" project are to increase the number of students attending and completing mathematics and science programs at the Shiprock Campus of Diné College through three specific activities: 1). Preparing high school students for college with a Summer Math/Science Enrichment Bridge; 2). Bridging students into college course work with a Science Honors Scholarship Program; and 3). Providing active learning experiences for students and faculty through Summer Research Internships in the Earth /Space Science areas.

Enrollment Data:

Ethnicity: 100% Native American

	Grade	Male	Female
Summer Math / Science Enrichment Bridge	10	1	
	11	2	5
	12	2	1
	13	1	
Science Honors Scholarship Program	13	7	6
	14	4	5
YEAR 2 Total Participants		**17**	**17**

Outcomes:

- **Summer Math/Science Enrichment Bridge**
  This component was designed as a 12-week Saturday Academy. Twelve students were brought together on Friday evenings and Saturday mornings to engage in academic studies focused on air, water, Earth, and fire. The program was very unique as the students had direct contact with professionals who work at the largest strip mining operation in the United States. The coal strip mining operation is located on the Navajo Nation. They were also able to have access to the power plant, which is located next door to the mine. Students received instruction in the following subject areas: Math Concepts & Skills, Math Earth Algebra, Communications, Navajo Studies, Computer Skills, and Water Ecology. A total of seven students successfully completed the program and went on to provide a mini-workshop on the scientific method and science project presentation. Several of the students also presented their projects at the National AISES Conference.

- **Science Honors Scholarship Program**
  NASA has provided scholarship assistance to 22 scholars. Fifteen were funded the first year of the grant and seven students were supported the second year.

  Diné College has successfully implemented a Science Honors Program (SHP) at Shiprock Campus that provides an extremely comprehensive academic support system for students. Students are recruited from high school graduating classes, as well as first-semester college freshmen. Recruitment is focused on students with proven solid academic backgrounds and a strong SMET interest. The program boasts a 77-percent retention rate. The SHP represents a small portion of the total Mathematics and Science Departments' efforts to increase the number of transfer students to the 4-year institutions. The number of SHP students who have matriculated to 4-year schools is remarkable. Of the 79 scholars since 1992, 61 have successfully transferred and 6 of these scholars have received bachelor of science degrees. NASA, the National Science Foundation, Johnson & Johnson Corporation, and the Office of Navajo Nation Education support the program.

  A 1994 alumnus of the program received his bachelor of science degree in Mechanical Engineering and is currently employed with the White Sands Test Facility working with Allied Signal Aerospace, a NASA subcontractor.

- **Summer Research Internships**
  Eight students participating in summer internships were supported by the grant. Funding stipends were awarded to cover expenses associated with travel to and from their research sites.

This project continues under the Partnership Awards through FY 2000.

Third-Party Awards

New Mexico Highlands University, American Indian Science and Technology Education Consortium (AISTEC)

NGT 5-90069 (1994) OEOP/GSFC (HQ), FY 1999: $1,000,000

Introduction:

The mission of AISTEC is to develop and nurture Native American students for careers in science, engineering, and mathematics, with a focus on the primary role of the Tribal Colleges.

Founded in 1993 with NASA guidance and support, AISTEC is an important NASA Tribal College-serving consortium for Science, Engineering, and Mathematics (SEM) development. Through its connection with NASA programs and research centers, AISTEC is invigorating Native American interest and involvement in SEM.

In FY 1999, AISTEC pursued five primary goals:

Goal 1	To assist AISTEC Tribal Colleges to develop curricular and technological infrastructure
Goal 2	To develop SEM articulation agreements between and among AISTEC Tribal Colleges, 4-year AISTEC universities and their affiliated Tribal Colleges
Goal 3	To develop and implement transition and SEM skills development programs at precollege, 2-year and university levels
Goal 4	To strengthen the role of and emphasis on Tribal Colleges
Goal 5	By centralized coordination, to increase program efficiency and impact of AISTEC program elements that have demonstrably strengthened Tribal institutions

Enrollment Data:

Precollege	398	Native American
Undergraduate	901	Native American
Graduate	9	Native American
Total	1,308	

Outcomes:

- Developed eight new SEM courses.
- Provided $69,000 in hardware and $430,695 in software and technical training to Tribal Colleges via a Microsoft grant.
- Further developed prototype SEM core curriculum based on National Standards.
- Completed six SEM articulation agreements between and among Tribal Colleges and 4-year universities. Two others are underway.
- Provided mathematics and science instructional services to 304 precollege students and 66 percent tested at or above current grade level as determined by standardized tests.
- Provided precollege SEM interest-building/skills development to 94 students who then showed gain on posttest measures.
- On track to meet objective to develop and convene external evaluation committee.
- Developed a Tribal College proposal review panel.
- Provided college entry and financial aid information for 417 Native American students who enrolled in SEM programs in the Fall of 1999.
- Developed software to pilot curriculum materials on AISTECNet.
- Provided mentoring and tutoring to 176 Native American AISTEC Tribal College students so that 68 percent completed SEM courses with a grade of "B" or better, and to 322 Native American students from AISTEC universities so that 76 percent completed SEM courses with a "B" or better.
- Provided a Tribal College entrepreneurial development and technology transfer workshop in September 1999.

Partnerships:

AISTEC developed four partners as follows:

1. **Microsoft** – provided support for technological development of AISTEC and the Tribal Colleges via training, hardware purchase, licensing and management support; in FY 1999, exceeded $500,000.

2. **Los Alamos National Laboratory** – provided technical support for technology transfer development including research personnel. Cosponsored Tribal College entrepreneurial development/technology transfer workshop in September 1999. FY 1999 support was $38,000, exclusive of workshop.

3. **Johnson Space Center** – provided $150,000 support for the development of a prototype hydrazine microchip sensor. AISTEC will share in 30 percent of royalties from future sales. Revenues will create fund for Tribal College development.

4. **Sandia National Laboratories** – Led the development of the hydrazine microchip sensor and participated in the Tribal College entrepreneurial development/technology transfer workshop at Los Alamos National Laboratory.

NASA Administrators Fellowship Program

NCC 5- 179 (1999) OEOP/GSFC (HQ), FY 1999: $200,000

The NASA Administrator's Fellowship Program (NAFP) is designed to enhance the professional development of NASA employees and the science, mathematics, and engineering faculty of minority-serving institutions. The program also aims at increasing the capability of minority-serving institutions to respond to NASA's overall research and development mission.

To accomplish these objectives, the NAFP invites two categories of respondents to apply. 1) NASA career employees - These fellows will teach and/or conduct research at a minority-serving institution and will participate in developmental assignments at NASA Headquarters and other government or private-sector organizations. 2) Science, mathematics, and engineering faculty of minority-serving institutions - These fellows will conduct research at a NASA Center, another government agency, a research university, or a private-sector organization.

Two NASA employees are conducting their fellowships at Tribal Colleges. One Ames Research Center employee is a Fellow at the American Indian Art Institute and a Johnson Space Center employee is a Fellow at Salish Kootenai College.

Private-Sector Involvement

Allied Technology Group, Inc.

NASW-98021 (1998) OEOP/GSFC (HQ), FY 1999: $56,000

Peer review support activities provided by Allied Technology Group.

FY 2001 PLAN

NASA’s goal for the NASA TCU Program is to improve the participation rates in NASA solicitations, student internships and fellowships, faculty development activities, teacher training and enhancement programs, and providing access to NASA educational materials.

To this end, NASA has established the following objectives for the support of TCU's in FY 2001:

1. Focus its attention on identifying and removing barriers to TCU participation in the areas designated by the White House Initiative Office on TCU's as the top priorities for Federal Agencies' support in the areas of technology, science, and mathematics.
2. Expand outreach activities to improve the relationships between TCU's and NASA, coupled with systematic modifications of existing NASA programs, with particular attention paid to activities designed to increase the familiarity of TCU's with NASA.
3. Work with the Minority University-Space Interdisciplinary Network (MU-SPIN) and other NASA computer and network technology programs to explore avenues for assisting the TCU's with their goal of bringing Internet resources to TCU campuses and to train TCU faculty, staff, and students in their usage. NASA TCU programs will explore the possibility of involving TCU's in NASA technology transfer efforts.
4. Increase the amount of funding in support of TCU's by $0.2 million per year, so that during the 5-year period from FY 1999 to FY 2003, the amount of funding will increase by $1 million over the FY 1998 baseline of $2.3 million.

Table 1: Projected Funding

Awards to TCU's ($M)	Actual FY 1999	Projected FY 2000	Projected FY 2001	Projected FY 2002	Projected FY 2003
All TCU's (Direct Awards)	$1.15	$1.60	$1.80	$2.00	$2.20
Other Institutions & National Organizations	$1.75	$1.10	$1.10	$1.10	$1.10
WHITCU Office					
TOTAL AWARDS	**$2.90**	**$2.70**	**$2.90**	**$3.10**	**$3.30**

Planned Programs and Activities:

Principal Investigator (PI) Awards

OEOP/SSC Projected FY 2001: $100,000. A significant barrier to TCU participation in the Faculty Awards for Research (FAR) program has been removed by giving a specific exemption from the requirement that FAR PI's must be tenured or tenure-track faculty members. It is hoped that technical assistance efforts undertaken by several of the NASA Centers will result in new FAR awards to TCU's.

Precollege Awards

Southwestern Indian Polytechnic Institute (SIPI), Upward Bound/ NASA Project NAG 9-937 (1996) OEOP/JSC Projected FY 2001: $100,000. The SIPI Upward Bound/NASA Project will complete its 3 years of planned funding under the PACE program in FY 2001.

Oglala Lakota College, Scientific Knowledge for Indian Learning and Leadership (OLC/SKILL) NASA Honors Program NAG 5-7548 (1998) OEOP/GSFC FY 2001: $100,000. The Oglala Lakota College, Scientific Knowledge for Indian Learning and Leadership (OLC/SKILL) NASA Honors Program Project will continue under the Precollege Award for Excellence in Mathematics, Science, Engineering and Technology (PACE) program through FY 2002.

Salish Kootenai College, Northern Rocky Mountain Tribal Pathway to Academic Excellence Program NAG 5-9147 (2000) OEOP/GSFC (HQ) Projected FY 2001: $100,000. The Precollege Award for Excellence in Mathematics, Science, Engineering and Technology (PACE) grant will continue through FY 2002.

New PACE Awards OEOP Projected FY 2001: $100,000

Proposals will be solicited for new Precollege Awards under the Science, Engineering, Mathematics Aerospace Academy (SEMAA)/PACE program criteria to be obligated in FY 2001 and continued through FY 2003. The number and distribution of awards to TCU's will be determined by a competitive review of the proposals received.

Partnership Awards

Diné College, American Indian Network Information Center (AINIC)
NAG 2-6012 (1997) OEOP/ARC Projected FY 2001: $133,300
This project will complete its planned 2 years of funding in FY 2002.

Diné College, Student Math & Science Career Initiatives NAG 9-968 (1997) OEOP/JSC Projected FY 2000: $164,116
This project will complete its planned 2 years of funding in FY 2003.

Oglala Lakota College, Project SMATH-Student Math & Health Sciences Initiative NAG 9-967 (1997) OEOP/JSC Projected FY 2000: $100,000
This project will complete its planned 2 years of funding in FY 2002.

Salish Kootenai College NASA Aeronautical Ambassador Program for American Indians (NAAPAI) NAG 4-128 (1997) OEOP/DFRC Projected FY 2001: $151,064
In FY 2000, approximately 170 teaching lessons, developed by the Teacher Ambassadors, will be piloted at various sites. A final draft of these lessons is expected in FY 2000. The project will complete its planned 2 years of funding in FY 2001.

Technical Assistance Activities and Collaborations with the NASA Centers and JPL, and the NASA Strategic Enterprises

NASA recognizes that critical steps must be taken to broaden the participation of underrepresented groups and minority institutions in NASA research programs and missions. As a result, beginning in FY 2000, NASA endeavored to create education outreach linkages and partnerships between the NASA Strategic Enterprise missions and the minority university community. An example of such a collaboration is shown in the first NASA Research Announcement jointly issued by the NASA Offices of Space Science and Equal Opportunity Programs.

Office of Space Science (OSS) / Office of Equal Opportunity Programs (OEOP) Minority University Education and Research Partnership Initiative in Space Science OEOP/OSS GSFC (HQ) Projected 2001

As a result of awards made to TCU's in FY 2000, during FY 2001, TCU’s will have an opportunity to develop space science-related education programs and materials aimed at many levels in the education system; and to enhance and develop the educational and research capabilities of faculty and students in space science-related fields through the establishment of partnerships and exchange programs in research and education with

NASA-supported space science research groups at colleges and universities, NASA Centers and JPL, other federal laboratories, and industrial organizations throughout the Nation.

Office of Earth Science (OES), Salish Kootenai College (SKC), Remote Sensing of Tribal Lands: Earth System Science Student Research Experiences at SKC, OES Projected FY 2001: $106,000
A new upper-division course, Remote Sensing of Tribal Lands, is being developed and taught within the SKC Bachelor of Science in Environmental Science Degree Program. Through undergraduate research internships, SKC students also apply remote sensing data and Earth system modeling to the solution of important environmental problems on tribal lands. FY 2000: $108,000; FY 2001: $106,000; FY 2002: $93,000

Office of Earth Science (OES), Salish Kootenai College (SKC), NASA Native Earth Systems Science Curriculum Project: OES Projected FY 2001: $155,000
The All Nations Alliance for Minority Participation (ANAMP) is developing curriculum materials related to fields of Earth system science and remote sensing for the K-4 education community. Curriculum materials that meet assessment and evaluation criteria will be field-tested in pilot modules within reservation schools. FY 2000: $155,000; FY 2001: $155,000; FY 2002: $155,000

Ames Research Center, D-Q University Pilot Program, ARC Projected FY 2001: In-Kind - ARC plans to develop a pilot program with D-Q University, a Tribal College located 100 miles north of ARC. The program will explore the most effective means of working with the University on an ongoing basis, including more effective proposal writing, student internships, training in the use of internet-based tools, and cultural exchanges.

Dryden Flight Research Center Technical Assistance, DFRC Projected FY 2001: In-Kind - DFRC plans to develop a pilot seminar/workshop that will assist in identifying and evaluating research and educational opportunities that may be available for DFRC and TCU's. The seminar/workshop will also identify additional TCU educational, research, and developmental programs for which DFRC can supply scientific and technical information and services.

Jet Propulsion Laboratory, TCU Partnerships, JPL Projected FY 2001: In-Kind - JPL plans to focus on establishing long-term partnerships with TCU's in South Dakota, Minnesota, Arizona and Native American communities in Southern California by building upon collaborative efforts initiated by JPL, DFRC, and ARC flight project Education and Public Outreach programs. JPL plans to conduct participatory workshops to meet identified needs in the following areas: to involve precollege and college students in youth leadership and internship programs, to engage traditional communities, and to enhance the teaching of science and the nature of science.

Kennedy Space Center Technical Assistance, KSC Projected FY 2001: In-Kind -
KSC plans to identify TCU's that are able to partner with KSC in implementing its strategic goals and objectives, participate in NASA-sponsored workshops designed to increase the familiarity of TCU's with NASA, and encourage program funding for support of TCU's by identifying talents and skills desired to accomplish programmatic goals. Additionally, KSC plans to involve TCU's in KSC technology transfer efforts through partnerships with other universities and local community ventures to form strong teams for the purpose of being more competitive in the applied R&D community.

Kennedy Space Center Student Internships and Coops Projected FY 2001: $3,000
KSC plans to continue to involve TCU students in cooperative education and summer internship programs.

NASA Administrator's Fellowship Program

NCC 5-179 (1999) OEOP/GSFC (HQ), FY 2001: $200,000

Two NASA employees will conduct their fellowships at Tribal Colleges.

Other Institutions and National Organizations (Third-Party Awards)

Goddard Space Flight Center, Minority University-Space Interdisciplinary Network (MU-SPIN), OEOP/GSFC Projected FY 2001: $50,000
MU-SPIN is a comprehensive educational initiative that is focused on the transfer of advanced computer networking technologies to minority universities and their use for supporting multidisciplinary research. The MU-SPIN Program offers many valuable and needed services to the university community. These services include hands-on training to faculty and students in accessing resources available over the Internet; hands-on training to technical staff in local area and campus on network installation, management, and user support; technical sessions at annual conferences; and technical video lectures on network-related issues. In FY 2001, MU-SPIN will conduct pilot projects and studies to determine ways MU-SPIN and NASA can most effectively support Tribal College computer network development needs.

Langley Research Center, Technical Assistance Hampton University OEOP/LaRC Projected FY 2001: $75,000
LaRC plans to conduct a series of workshops such as the Small and Disadvantaged Business/University Opportunities Forum as a means to meet the goal of improving the TCU participation rate in LaRC's solicitations for grants, cooperative agreements, and contracts on a regular basis. LaRC will also conduct video teleconferences with TCU's having the capabilities to support such an activity as a means of informing students and faculty of NASA outreach programs including the exchange visitations between the TCU students and the LaRC scientists, engineers, and administrative professional staff.

National Action Council for Minorities in Engineering, Undergraduate Scholars Awards for Research OEOP/GRC FY Projected 2001: $36,000
The Undergraduate Scholars Awards for Research program plans to support three D-Q University students in FY 2001.

National Space Grant College and Fellowship Program (Office of Human Resources and Education [OHRE]) Various OHRE Projected FY 2001: $102,000
Space Grant consortia will assist TCU administrators, faculty, and students with resources such as grant-writing workshops, Internet access, use of research facilities, student tuition assistance, and curriculum and faculty development. The funding shown here is the portion of Space Grant funds projected to be directed to Tribal Colleges in FY 2001.

New Mexico Highlands University, Technology Transfer and Commercialization Office, JSC Projected FY 2001: $33,333
New Mexico Highlands University will establish an office dedicated to assisting minority universities, including TCU's, to develop technology transfer and commercialization projects that might serve as a source of economic development for their communities. The funding shown is the portion of the award directed towards TCU's.

Private-Sector Involvement

Global Science and Technology, Incorporated was awarded the NASA Peer Review Services contract for 5 years beginning in FY 2000. OEOP/GSFC (HQ) Projected FY 2001: $100,000. Peer review support activities will be provided by Global Science and Technology's NASA Peer Review Services.

TABLE 2-A: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2001

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)												PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
1. Research & Development	$350,000	Principal Investigator Awards and other R&D	x	x				x					Various Enterprises	NASA, TCU's	Peer Review, refereed publications, technical presentations
2.Technology-related Activities (including Tech R&D)	$20, 000	New Mexico Highlands, Technology Transfer	x	x				x			x		Communicate Knowledge	NASA, TCU's, universities, industry	Technology transfer activities by TCU's
3.Direct Institutional Subsidies															
4. Program Evaluation															
5. Training-Technical Assistance	$400,000	Precollege Awards	x	x	x		x				x			NASA TCU's, local schools	Enrollment in MSET courses, graduation, enrollment in college, selection of MSET majors, completion of freshman year in college.
	$500,000	Partnership Awards JPL	x	x	x		x	x			x				
	$50,000	Applied Technology Classroom	x	x	x			x	x						Varies according to the specific content of each award
	$500,000	NASA Centers & JPL outreach	x	x	x		x	x					Communicate Knowledge		Teacher training
	$200,000	Curriculum Improvement Awards	x	x	x			x			x				New NASA/TCU projects; TCU faculty/student participation in NASA activities
6. Facilities & Equipment															
7. Fellowships, Internships, Recruitment, IPA's	$170,000	Student/faculty Internships, Fellowships, and Coops	x	x	x			x					Communicate Knowledge	NASA, TCU's	TCU student/faculty participation in NASA activities
	200,000	Administrator's Fellowship	x	x	x			x							Research outcomes, presentation of technical papers, community outreach, career enhancement
8. Student Tuition Aid, Scholarships, & Other Aid to TCU's for Students	$48,000	NACME, Undergraduate Scholars	x	x	x						x		Communicate Knowledge	NASA, TCU's	New TCU projects; TCU faculty/student participation in NASA activities. Degrees awarded, post-graduation plans.

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 2-A: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2001

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)											PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
9. Economic Development Activities															
10. Administrative Infrastructure															
11. Other Activities	$88,000 $102,000	Global Science and Technology, Inc. Space Grant	x	x	x			x			x		Communicate Knowledge	NASA, TCU's, other colleges and universities	Varies according to activities targeted by each State
Total	$2,900,000														

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 3-A: SUMMARY OF TOTAL AGENCY AWARDS BY CATEGORY: FY 2001

1. Agency: National Aeronautics and Space Administration

2. Name, Title, and Signature of Agency Representative:

George E. Reese
Associate Administrator for Equal Opportunity Programs

3. Total Projected Funding for All Institutions of Higher Education in FY 2001: **$1,030,684,000**

AWARDS (Dollars in Thousands)

CATEGORY	TOTAL AWARDS TO IHE's*	TOTAL PROJECTED AWARDS TO TCU's	% OF AWARDS TO TCU's
1. Research & Development	$896,388	$350	<.1%
2. Technology-Related Activities		$292	
3. Direct Institutional Subsidies			
4. Program Evaluation			
5. Training & Technical Assistance	$38,372	$1,650	4.3%
6. Facilities & Equipment	$4,134		
7. Fellowships, Internships, Recruitment, IPA's	$16,536	$370	2.2%
8. Student Tuition Assistance, Scholarships, and Other Aid		$48	
9. Economic Development			
10. Administrative Infrastructure			
11. Other Activities	$75,254	$190	.25%
Total	$1,030,684	$2,900	.28%

Daniel S. Goldin
Agency Head

Agency Head (Signature)

Date

*IHE's= Institutions of Higher Education

FY 2002 PLAN

In FY 2002, NASA plans to continue implementing the following objectives for the support of TCU's:

1. NASA will focus its attention on identifying and removing barriers to TCU participation in the areas designated by the White House Initiative Office on TCU's as the top priorities for Federal Agencies' support in technology and in science and mathematics.
2. NASA will increase the amount of funding in support of TCU's by $0.2 million per year, so that during the 5-year period from FY 1999 to FY 2003, the amount of funding will increase by $1 million over the FY 1998 baseline of $2.3 million.

The priority activities will be continued in FY 2002:

- Outreach activities designed to increase the familiarity of TCU's with NASA.
- Precollege education and teacher training activities.
- Computer and network technology support.
- Technology transfer.

Planned Programs and Activities:

Technical Assistance Activities and Collaborations with the NASA Centers and JPL, and the NASA Strategic Enterprises

NASA will continue to broaden the participation of TCU's in NASA research programs and missions through education outreach linkages and partnerships between the NASA Strategic Enterprise missions, NASA Centers and JPL, and the TCU community. NASA will improve communications and accessibility via a webpage for Native Americans. This webpage will include a hotlink to information about educational and research grants and contracts, and internships and fellowships for which TCU's and Native Americans are eligible to apply for participation. Examples of other collaborations are cited below.

Office of Space Science (OSS)/Office of Equal Opportunity Programs (OEOP) Minority University Education and Research Partnership Initiative in Space Science (2000) OEOP/OSS GSFC (HQ) Projected 2002

As a result of awards made in FY 2000, TCU's will continue to contribute to the development of space science-related academic capabilities and education programs and materials aimed at many levels in the education system, and to enhance and develop the educational and research capabilities of faculty and students in space science-related

fields through the establishment of partnerships and exchange programs in research and education with NASA-supported space science research groups at colleges and universities, NASA Centers and JPL, other federal laboratories, and industrial organizations throughout the Nation.

Office of Earth Science (OES), Salish Kootenai College (SKC), Remote Sensing of Tribal Lands: Earth System Science Student Research Experiences at SKC, OES Projected FY 2002: $93,000

Continue award begun in FY 2000 for the third year.

Office of Earth Science (OES), Salish Kootenai College (SKC), NASA Native Earth Systems Science Curriculum Project: OES Projected FY 2002: $155,000

Continue award begun in FY 2000 for the third year.

Principal Investigator Awards

Faculty Awards for Research (FAR) OEOP/NASA Centers Projected FY 2002: $100,000. A significant barrier to TCU participation in the Faculty Awards for Research (FAR) program has been removed by giving a specific exemption from the requirement that FAR PI's must be tenured or tenure-track faculty members. It is hoped that technical assistance efforts undertaken by several of the NASA Centers will result in new FAR awards to TCU's.

Precollege Awards

Oglala Lakota College, Scientific Knowledge for Indian Learning and Leadership (OLC/SKILL) NASA Honors Program NAG 5-7548 (1998) OEOP/GSFC FY 2002: $100,000. The Oglala Lakota College, Scientific Knowledge for Indian Learning and Leadership (OLC/SKILL) NASA Honors Program Project will continue under the Precollege program through FY 2002.

Salish Kootenai College, Northern Rocky Mountain Tribal Pathway to Academic Excellence Program NAG 5-9147 (2000) OEOP/GSFC (HQ) Projected FY 2002: $100,000. The Precollege Award for Excellence in Mathematics, Science, Engineering and Technology (PACE) grant will continue through FY 2002.

Precollege Awards OEOP Projected FY 2002: $100,000
Proposals will be solicited for new Precollege Awards under the Science, Engineering, Mathematics Aerospace Academy (SEMAA)/PACE program criteria to be obligated in FY 2001 and continued through FY 2003. The number and distribution of awards to TCU's will be determined by a competitive review of the proposals received.

TABLE 2-B: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2002

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)												PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
1. Research & Development	$350,000	Principal Investigator Awards and other R&D	x	x				x					Various Enterprises	NASA, TCU's	Peer Review, refereed publications, technical presentations
2.Technology-related Activities (including Tech R&D)	$20, 000	New Mexico Highlands, Technology Transfer	x	x				x			x		Communicate Knowledge	NASA, TCU's, universities, industry	Technology transfer activities by TCU's
3.Direct Institutional Subsidies															
4. Program Evaluation															
5. Training-Technical Assistance	$400,000	Precollege Awards	x	x	x		x				x			NASA TCU's, local schools	Enrollment in MSET courses, graduation, enrollment in college, selection of MSET majors, completion of freshman year in college.
	$500,000	Partnership Awards JPL	x	x	x		x	x			x				
	$50,000	Applied Technology Classroom	x	x	x			x	x						Varies according to the specific content of each award
	$500,000	NASA Centers & JPL Outreach	x	x	x		x	x					Communicate Knowledge		Teacher training
	$400,000	Curriculum Improvement Awards	x	x	x			x			x				New NASA/TCU projects; TCU faculty/student participation in NASA activities
6. Facilities & Equipment															
7. Fellowships, Internships, Recruitment, IPA's	$170,000	Student/Faculty Internships, Fellowships, and Coops	x	x	x			x					Communicate Knowledge	NASA, TCU's	TCU student/faculty participation in NASA activities
	200,000	Administrator's Fellowship	x	x	x			x							Research outcomes, presentation of technical papers, community outreach, career enhancement
8. Student Tuition Aid, Scholarships, & Other Aid to TCU's for Students	$48,000	NACME, Undergraduate Scholars	x	x	x						x		Communicate Knowledge	NASA, TCU's	New TCU projects; TCU faculty/student participation in NASA activities. Degrees awarded, post-graduation plans.

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 2-B: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2002

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)											PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
9. Economic Development Activities															
10. Administrative Infrastructure															
11. Other Activities	$88,000 $102,000	Global Science and Technology, Inc. Space Grant	x	x	x			x			x		Communicate Knowledge	NASA, TCU's, other colleges and universities	Varies according to activities targeted by each State
Total	$3,100,000														

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 3-B: SUMMARY OF TOTAL AGENCY AWARDS BY CATEGORY: FY 2002

1. Agency: National Aeronautics and Space Administration

2. Name, Title, and Signature of Agency Representative:

George E. Reese
Associate Administrator for Equal Opportunity Programs

3. Total Projected Funding for All Institutions of Higher Education in FY 2002: **$1,030,684,000**

AWARDS (Dollars in Thousands)

CATEGORY	TOTAL AWARDS TO IHE's*	TOTAL PROJECTED AWARDS TO TCU's	% OF AWARDS TO TCU's
1. Research & Development	$896,388	$350	<.1%
2. Technology-Related Activities		$292	
3. Direct Institutional Subsidies			
4. Program Evaluation			
5. Training & Technical Assistance	$38,372	$1,850	4.8%
6. Facilities & Equipment	$4,134		
7. Fellowships, Internships, Recruitment, IPA's	$16,536	$370	2.2%
8. Student Tuition Assistance, Scholarships, and Other Aid		$48	
9. Economic Development			
10. Administrative Infrastructure			
11. Other Activities	$75,254	$190	.25%
Total	$1,030,684	$3,100	.30%

Daniel S. Goldin
Agency Head (Typed)

Agency Head (Signature)

Date

*IHE's= Institutions of Higher Education

FY 2003 PLAN

In FY 2003, NASA plans to continue implementing the following objectives for the support of TCU's:

- NASA will focus its attention on identifying and removing barriers to TCU participation in the areas designated by the White House Initiative Office on TCU's as the top priorities for Federal Agencies' support in technology and in science and mathematics.

- NASA will increase the amount of funding for the support of TCU's by $0.2 million per year, so that during the 5-year period from FY 1999 to FY 2003, the amount of funding will increase by $1 million over the FY 1998 baseline of $2.3 million.

The priority activities will be continued in FY 2003:

- Outreach activities designed to increase the familiarity of TCU's with NASA.
- Precollege education and teacher training activities.
- Computer and network technology support.
- Technology transfer.

Planned Programs and Activities:

Technical Assistance Activities and Collaborations with the NASA Centers and JPL, and the NASA Strategic Enterprises

NASA will continue to broaden the participation of Tribal Colleges and Universities in NASA research programs and missions through education outreach linkages and partnerships between the NASA Strategic Enterprise missions, the NASA Centers and JPL, and the minority university community. Such collaborations will be published as NASA Research Announcements and will be available through NASA's website: http://www.nasa.gov.

Precollege Awards

Precollege Awards OEOP Projected FY 2003
Proposals will be solicited for new Precollege Awards under the Science, Engineering, Mathematics Aerospace Academy (SEMAA)/PACE program criteria to be obligated in FY 2003. The number and distribution of awards to TCU's will be determined by a competitive review of the proposals received.

TABLE 2-C: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2003

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)												PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
1. Research & Development	$350,000	Principal Investigator Awards and other R&D	x	x				x					Various Enterprises	NASA, TCU's	Peer Review, refereed publications, technical presentations
2.Technology-related Activities (including Tech R&D)	$20, 000	New Mexico Highlands, Technology Transfer	x	x				x			x		Communicate Knowledge	NASA, TCU's, universities, industry	Technology transfer activities by TCU's
3.Direct Institutional Subsidies															
4. Program Evaluation															
5. Training-Technical Assistance	$400,000	Precollege Awards	x	x	x		x				x			NASA TCU's, local schools	Enrollment in MSET courses, graduation, enrollment in college, selection of MSET majors, completion of freshman year in college.
	$500,000	Partnership Awards JPL	x	x	x		x	x			x				
	$50,000	Applied Technology Classroom	x	x	x			x	x						Varies according to the specific content of each award
	$500,000	NASA Centers & JPL Outreach	x	x	x		x	x					Communicate Knowledge		Teacher training
	$600,000	Curriculum Improvement Awards	x	x	x			x			x				New NASA/TCU projects; TCU faculty/student participation in NASA activities
6. Facilities & Equipment															
7. Fellowships, Internships, Recruitment, IPA's	$170,000	Student/faculty Internships, Fellowships, and Coops	x	x	x			x					Communicate Knowledge	NASA, TCU's	TCU student/faculty participation in NASA activities
	200,000	Administrator's Fellowship	x	x	x			x							Research outcomes, presentation of technical papers, community outreach, career enhancement
8. Student Tuition Aid, Scholarships, & Other Aid to TCU's for Students	$48,000	NACME, Undergraduate Scholars	x	x	x						x		Communicate Knowledge	NASA, TCU's	New TCU projects; TCU faculty/student participation in NASA activities. Degrees awarded, post-graduation plans.

AGENCY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE 2-C: Projected NASA Awards Listing of Planned Programs and Activities, Fiscal Year 2003

CATEGORY	ESTIMATED AWARD	PROGRAM ACTIVITY	GOALS IMPACTED (EO, AGENCY, TCU, PARTNERSHIPS)											PERFORMANCE INDICATORS & OBJECTIVES
			EO 13021 Goal No.:					WHITCU Priority Area No.:					Agency Goal	Public-Private Partnerships	
			1	2	3	4	5	1	2	3	4	5			
9. Economic Development Activities															
10. Administrative Infrastructure															
11. Other Activities	$88,000 $102,000	Global Science and Technology, Inc. Space Grant	x	x	x			x			x		Communicate Knowledge	NASA, TCU's, other colleges and universities	Varies according to activities targeted by each State
Total	$3,300,000														

TABLE 3-C: SUMMARY OF TOTAL AGENCY AWARDS BY CATEGORY: FY 2003

1. Agency: National Aeronautics and Space Administration

2. Name, Title, and Signature of Agency Representative:

George E. Reese
Associate Administrator for Equal Opportunity Programs

3. Total Projected Funding for All Institutions of Higher Education in FY 2003: **$1,030,684,000**

AWARDS (Dollars in Thousands)

CATEGORY	TOTAL AWARDS TO IHE's*	TOTAL PROJECTED AWARDS TO TCU's	% OF AWARDS TO TCU's
1. Research & Development	$896,388	$350	<.1%
2. Technology-Related Activities		$292	
3. Direct Institutional Subsidies			
4. Program Evaluation			
5. Training & Technical Assistance	$38,372	$2,050	5.3%
6. Facilities & Equipment	$4,134		
7. Fellowships, Internships, Recruitment, IPA's	$16,536	$370	2.2%
8. Student Tuition Assistance, Scholarships, and Other Aid		$48	
9. Economic Development			
10. Administrative Infrastructure			
11. Other Activities	$75,254	$190	.25%
Total	$1,030,684	$3,300	.32%

Daniel S. Goldin
Agency Head

Agency Head (Signature)

Date

*IHE's= Institutions of Higher Education